

## AMENDMENTS

### In the Claims

#### Current Status of Claims

1 1.(canceled) A process for cleaning a material comprising the step of:  
2 contacting a material with an extracting fluid under conditions of temperature and pressure  
3 sufficient to maintain the fluid at, near or above its critical point to produce a clean material.

1 2.(currently amended) The process of claim 2538, wherein the extracting fluid is selected  
2 from the group consisting of Xe, NH<sub>3</sub>, lower aromatics, nitrous oxide, water, CO, CO<sub>2</sub>, H<sub>2</sub>O, lower  
3 alcohols, lower alkanes, lower alkenes and mixtures or combinations thereof.

1 3.(currently amended) The process of claim 2538, wherein the extracting fluid comprises a  
2 major portion of CO, and a minor portion of a secondary fluid selected from the groups consisting  
3 of Xe, NH<sub>3</sub>, lower aromatics, nitrous oxide, water, CO, H<sub>2</sub>O, lower alcohols, lower alkanes, lower  
4 alkenes and mixtures or combinations thereof.

1 4.(currently amended) The process of claim 2538, wherein the extracting fluid is CO<sub>2</sub>

1 5.(currently amended) The process of claim 2538, wherein the material-to-be-treated is a drill  
2 fluid and the non-aqueous fluid product comprises a hydrocarbon product substantially free of  
3 contaminants, and the solids product is substantially free of hydrocarbons and other contaminants.

1 6.(currently amended) The process of claim 2538, wherein the material-to-be-treated is a used  
2 oil and the non-aqueous fluid product comprises a cleaned oil substantially free of water and water  
3 soluble contaminants and substantially free of solids.

1 7.(currently amended) The process of claim 6, wherein the cleaned oil has a lower sulfur  
2 content than the used oil prior to ~~treating~~ cleaning.

1 8.(currently amended) The process of claim 2538, wherein the material-to-be-treated is a

hydrocarbon fuel and the non-aqueous fluid product comprises a cleaned fuel having a lower sulfur content than the hydrocarbon fuel prior to cleaning treating.

9.(**currently amended**) The process of claim 2538, wherein the material is a hydrocarbon contaminated soil and the non-aqueous fluid product comprises a hydrocarbon product substantially free of solids, water and water soluble contaminants, the solids product comprises a cleaned soil substantially free of hydrocarbon and other contaminants, and the aqueous product is substantially free of hydrocarbon.

10.(**canceled**) A process for treating drilling fluids comprising the step of:  
contacting a drill fluid with an extracting fluid under conditions of temperature and pressure sufficient to maintain the solvent at, near or above its critical point to produce a hydrocarbon product substantially free of contaminants, a solids product substantially free of hydrocarbons and other contaminants, and an aqueous product.

11.(**canceled**) The process of claim 10, wherein the extracting fluid is selected from the group consisting of comprising Xe, NH<sub>3</sub>, lower aromatics, nitrous oxide, water, CO, CO<sub>2</sub>, H<sub>2</sub>O, lower alcohols, lower alkanes, lower alkenes and mixtures or combinations thereof

12.(**canceled**) The process of claim 10, wherein the extracting fluid comprises a major portion of CO<sub>2</sub> and a minor portion of a secondary fluid selected from the groups consisting of Xe, NH<sub>3</sub>, lower aromatics, nitrous oxide, water, CO, H<sub>2</sub>O, lower alcohols, lower alkanes, lower alkenes and mixtures or combinations thereof

13.(**canceled**) The process of claim 10, wherein the extracting fluid is CO<sub>2</sub>

14.(**previously amended**) A solids composition comprising the solid product of the claim 25.

15.(**previously presented**) A hydrocarbon composition comprising the fluid product of the claim 25.

1 16.(previously presented) An aqueous composition comprising the aqueous product of the claim  
2 25.

1 17.(canceled) A process for treating used oil comprising the step of:  
2 contacting a used oil with an extracting fluid under conditions of temperature and pressure sufficient  
3 to maintain the solvent at, near or above its critical point to produce a cleaned oil substantially free  
4 of water and water soluble contaminants.

1 18.(canceled) The process of claim 17, wherein the extracting fluid is selected from the group  
2 consisting of comprising Xe, NH<sub>3</sub>, lower aromatics, nitrous oxide, water, CO, CO<sub>2</sub>, H<sub>2</sub>O, lower  
3 alcohols, lower alkanes, lower alkenes and mixtures or combinations thereof.

1 19.(canceled) The process of claim 17, wherein the extracting fluid comprises a major portion of  
2 CO<sub>2</sub>, and a minor portion of a secondary fluid selected from the groups consisting of Xe, NH<sub>3</sub>, lower  
3 aromatics, nitrous oxide, water, CO, H<sub>2</sub>O, lower alcohols, lower alkanes, lower alkenes and mixtures  
4 or combinations thereof.

1 20.(canceled) The process of claim 17, wherein the extracting fluid is CO<sub>2</sub>

1 21.(canceled) A process for treating hydrocarbon fuels drilling fluids comprising the step of:  
2 contacting a hydrocarbon fuel with an extracting fluid under conditions of temperature and pressure  
3 sufficient to maintain the solvent at, near or above its critical point to produce a cleaned fuel having  
4 a lower sulfur content than the hydrocarbon fuel prior to cleaning.

1 22.(canceled) The process of claim 21, wherein the extracting fluid is selected from the group  
2 consisting of comprising Xe, NH<sub>3</sub>, lower aromatics, nitrous oxide, water, CO, CO<sub>2</sub>, H<sub>2</sub>O, lower  
3 alcohols, lower alkanes, lower alkenes and mixtures or combinations thereof.

1 23.(canceled) The process of claim 21, wherein the extracting fluid comprises a major portion of

CO<sub>2</sub> and a minor portion of a secondary fluid selected from the groups consisting of Xe, N<sub>2</sub>, lower aromatics, nitrous oxide, water, CO<sub>2</sub>, H<sub>2</sub>O, lower alcohols, lower alkanes, lower alkenes and mixtures or combinations thereof.

24.(canceled) The process of claim 21, wherein the extracting fluid is CO<sub>2</sub>

25.(currently amended) The A process of claim 38 for treating a material-to-be-treated further comprising the steps of:

prior to contacting, charging a quantity of the material-to-be-treated into an interior of an inner tube of a tubular extraction vessel comprising: an upper portion including an outer tube, an middle tube, and an inner tube; a semi-permeable membrane; and a lower portion,

prior to contacting, charging a quantity of ~~an~~ the extraction fluid to a plurality of interior sites of the tubular reactor until the fluid is at or above its critical point,

concurrently with extracting, removing water and water soluble components via the semi-permeable membrane into the lower portion of the tubular extraction vessel to produce an aqueous product,

forwarding the treated material and the extraction fluid into a first separation vessel comprising an interior, a treated material inlet, a fluid outlet and a solids outlet having a venturi valve;

removing the solids through the venturi valve to a solids storage container to produce a solids product,

removing the fluid to a second separator having a fluid level sensor to produce a non-aqueous fluid product, and

transferring the non-aqueous fluid product to a fluid storage container.

26.(previously presented) A solids composition comprising the solid product of the claim 5.

27.(previously presented) A hydrocarbon composition comprising the fluid product of the claim 5.

1 28.(previously presented) An aqueous composition comprising the aqueous product of the claim  
2 5.

1 29.(previously presented) A solids composition comprising the solid product of the claim 7.

1 30.(previously presented) A hydrocarbon composition comprising the fluid product of the claim  
2 7.

1 31.(previously presented) An aqueous composition comprising the aqueous product of the claim  
2 7.

1 32.(previously presented) A solids composition comprising the solid product of the claim 8.

1 33.(previously presented) A hydrocarbon composition comprising the fluid product of the claim  
2 8.

1 34.(previously presented) An aqueous composition comprising the aqueous product of the claim  
2 8.

1 35.(previously presented) A solids composition comprising the solid product of the claim 9.

1 36.(previously presented) A hydrocarbon composition comprising the fluid product of the claim  
2 9.

1 37.(previously presented) An aqueous composition comprising the aqueous product of the claim  
2 9.

#### **New Claim**

1 38.(new) A process for cleaning a material comprising the step of:  
2 contacting a material-to-be-treated with an extracting fluid under conditions of temperature

3 and pressure sufficient to maintain the fluid at, near or above its critical point to produce a clean  
4 material.